

REMARKS

An updating of the status of U.S. Application No. 09/932,396 on Page 1 of the Specification has been required. Applicants have updated the reference to the priority application for the present application, to indicate that the application has issued into U.S. Patent No. 6,699,356.

Claims rejected under 35 U.S.C. § 103:

Claims 1 - 3, 10, 13 - 19, 25, and 27 are rejected under 35 U.S.C. § 103 (a) as being unpatentable over Frankoski et al. (U.S. 6,344, 106).

The Frankoski et al. reference pertains to an apparatus and corresponding method for chemically etching the copper foil of a copper foil-clad substrate. The apparatus includes fluid jet injectors which serve to produce jets of chemical etchant. (Abstract) At Col. 2, the Frankoski et al. reference describes an etch rate which is greater than 0.3 micrometers per second, or equal to or greater than 0.5 micrometers per second, and even as high as about 3 micrometers per second. (Col. 2, lines 12 - 19). The Frankoski et al. reference pertains to etching of a copper foil overlying a substrate, e.g. a printed circuit board substrate. (Col. 2, lines 1 - 3) Applicants' Claim 1 recites that an etch rate of at least about 10 microns per minute is achieved (3 times that claimed in the Frankoski et al reference). Further, applicants recite the formation of at least one three-dimensional feature on a surface of a semiconductor workpiece. The Frankoski et al. reference is describing etching a copper foil and not etching a semiconductor substrate. One skilled in the art will recognize that the problems which have to be solved in each case are significantly different, and that the Frankoski et al. reference does not enable applicants' claimed invention and does not make applicants' claimed invention obvious. The Examiner has not provided a prima facie case of obviousness.

With respect to Claim 2 in the present application, applicants are claiming that the semiconductor workpiece comprises a material selected from the group consisting of a silicon

wafer, or gallium arsenide, or other semiconductor substrate, silicon-on-insulator ("SOP"), SiO₂, glass, quartz, pyrex, ceramic, or glass bonded to a substrate, conductor, or insulator. The Frankoski et al. reference describes only the etching of a copper foil overlying a printed circuit board. Evidently the Examiner is rejecting Claim 2 due to the reference to a conductor. However, applicants are etching a semiconductor workpiece which comprises a conductor. They are not etching a foil which overlies a printed circuit board. Applicants contend that the disclosure in the Frankoski et al. reference does not render applicants' Claim 2 obvious. The Frankoski et al. reference does not provide a prima facie case of obviousness.

Despite the above distinctions and other distinctions which can be drawn between applicants' invention and the teachings in the Frankoski, applicants' are anxious to have the claims which are indicated to be allowable in the present application issue for business reasons, and are electing to take the claims which the Examiner has indicated to be allowable at this time. However, applicants would like to make it clear that the claims which are being cancelled are being cancelled for business purposes, and not in view of the reference cited. Therefore, applicants consider the claims which are cancelled herein to be cancelled without prejudice.

Allowable Subject Matter:

Applicants have cancelled Claims 1 - 3. Applicants did not cancel Claim 10, which depends from Claims 1 - 3, but amended Claim 10 to depend from Claim 4, which has been indicated to be allowable. Claim 10 should be allowable in its amended form. Claim 6 has been cancelled because the recitations of Claim 6 have been added to Claim 4. Claims 13 - 15, which depend from Claim 10 have not been cancelled, as Claim 10 should be allowable in its amended form. Claims 16 and 17, each of which depend from Claim 1 or Claim 3, have been amended to depend from Claim 4, which has been indicated to be allowable. Claims 16 and 17 should be allowable in view of this amendment.


Claims 18 and 19 have been cancelled; however, these claims are considered by applicants to be allowable for the same reasons that Claims 1 and 3 are considered to be allowable. Applicants consider these claims to have been cancelled without prejudice. Claim 24 has been cancelled because the recitations of Claim 24 have been included in Claim 20. Claim 25 has been amended so that it no longer depends from Claim 18, but depends only from Claim 20, which has been indicated to be allowable. The same is true with respect to Claim 27. Claims 25 and 27 should be allowable in view of this amendment.

New Claim 28 has been added as the representative claim for Claim 4 as depending from Claim 3. The limitations of Claim 1, Claim 3, Claim 4 (and Claim 6) are recited in new Claim 28. No new subject matter has been included in Claim 28. Dependent claims which depend from original Claim 4, which was a multiple dependent Claim depending from Claims 1 and 3, have been rewritten to depend from Claim 4 or Claim 28, since Claim 4 includes the recitations in Claim 4 and Claim 1, while Claim 28 includes the recitations of Claim 4 and Claim 1, and Claim 3.

Applicants contend that the amended claims currently pending in the application are allowable, and the Examiner is respectfully requested to pass the application to allowance.

The Examiner is invited to contact applicants' attorney with any questions or suggestions, at the telephone number provided below.

Respectfully submitted,


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Attorney Docket No.: AM-5609.D1

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